

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/001144

International filing date (day/month/year)
17.03.2004

Priority date (day/month/year)
17.03.2003

International Patent Classification (IPC) or both national classification and IPC
G01V11/00

Applicant
STATOIL ASA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/GB2004/001144

JCO5 Rec'd PCT/INTG 05 SEP 2005

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/001144

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1
	No: Claims	5,34
Inventive step (IS)	Yes: Claims	1
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1,5,34
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/GB04/01144

The examination is being carried out on the **following application documents**:

Description, pages:

1-14 as originally filed

Claims, No.:

1-35 as originally filed

Reference is made to the following document:

D1: WO-A-0214906 (Rees D)

1.) The application does not meet the requirements of **Article 6 PCT**, because independent claim 5 is not clear.

It is clear from the description on page 3, li.13-30 that also the method as claimed in independent claim 5 (which uses refracted EM and seismic waves components in order to produce a report on the presence and nature of the strata) employs a seismic source and an EM field transmitter, both of which are placed at substantially the same location. Furthermore, the method also employs a seismic receiver and an EM field receiver, both of which are placed at substantially the same location.

Since independent claim 5 does not contain these features it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

Consequently, claim 5 should be made a dependent claim on independent claim 1.

2.) The subject-matter of claim 5, in its present form as an independent claim, is not new (**Art. 33(1),(2) PCT**):

Claim 5 merely claims combining two well known surveying techniques in order to identify a hydrocarbon reservoir. This is known from D1:

D1 discloses a method of producing a survey report of subterranean strata using an EM wave field response from an applied EM field and a seismic response from an applied seismic event comprising the steps:

- identifying the refracted wave component of the EM wave field response (D1; p.5, li.18 - p. 6, li.2)
- identifying the refracted wave component of the seismic response: D1; p.6, li.27, 28 and also p.10, li.4-7: conventional seismic techniques are used for the identification of the hydrocarbon reservoir; identifying the refracted component in a seismic response is such a conventional seismic processing technique which is perfectly known to the skilled man.
- using the two refracted wave components to produce a report on the presence and nature of the strata: D1; p.6, li.27, 28: both techniques, electromagnetic and seismic surveying, are used in conjunction in order to identify the hydrocarbon reservoir.

3.) The features of the claims which depend on claim 5 seem to be a matter of normal design procedure in order to carry out a combined electromagnetic and seismic survey. They would be easily included in D1 and do therefore not involve an inventive step (Art.33(1),(3) PCT).

4.) The subject-matter of claim 1 (method) is new and inventive.

5.) The subject-matter of independent claim 34 (apparatus) is new and inventive with regard to the method as claimed in claim 1 (and the claims dependent on claim 1).

6.) With regard to the method as claimed in claim 5 (and the claims dependent on claim 5), the apparatus as claimed in independent claim 34 is not considered to be inventive (Art. 33(1),(3) PCT).

7.) **Suggestion:** to overcome the clarity objections and the objections concerning novelty and inventive step as raised in points 1, 2, 3 and 6 of this letter, the applicant is suggested to make claim 5 a dependent claim on independent claim 1. The features of such a new set of claims would be considered as being new and inventive. A positive YPER with regard to all claims could be issued.